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(54) Title: HETEROLOGOUS G-CSF FUSION PROTEINS

(57) Abstract: The present invention encompasses heterologous fusion proteins comprising a hyperglycosylated G-CSF analog fused to proteins such as albumin and the Fc portion of an immunoglobulin which act to extend the in vivo half-life of the protein compared to native G-CSF. These fusion proteins are particularly suited for the treatment of conditions treatable by stimulation of circulating neutrophils, such as after chemotherapy regimens or in chronic congenital neutropenia.



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## INTERNATIONAL SEARCH REPORT

International application No.

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**A. CLASSIFICATION OF SUBJECT MATTER**IPC(8): A61K 39/00( 2007.01);C07K 17/00( 2007.01)  
C07K 19/00( 2007.01)

USPC: 424/134.1,178.1;530/351

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 424/134.1,178.1;530/351

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
Sequence search; East; STN.**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,665,863 (YEH et al.) 9 Sept. 1997; Whole document, especially col. 2, lines 9-16, 55-67, col. 3, lines 1-19, Figure 5	1-51
Y	Halpern et al., Albugranin <sup>TM</sup> , a Recombinant Human Granulocyte Colony Stimulating Factor (G-CSF) Genetically Fused to Recombinant Human Albumin Induces Prolonged Myelopoietic Effects in Mice and Monkeys. Pharmaceutical Research, 19, 1720-1729, 2002. Whole document	1-51
Y	US 5,908,626 (Chang et al.), 1 June 1999. Whole doc., esp. col.1 line 60-67, col. 2 line 10-14	22-38
Y	US 5,776,895 (Alber et al.), 7 July 1998, col. 3, lines 60-66	1-54
Y	US 5,218,092 (Sasaki et al.), 8 June 1993, col5. lines 5-34, col. 10, lines 32-68, col. 11-15, Examples 1-5, ref. example 4, 10	1-51
Y	US Pub. No. 2002/0151488 A1, (Sarkar et al.), 17 October 2002, [0066]-[0068], [0070]-[0073], [0106], [0143], [0181].	1-51



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed		

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## C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y ✓	US Pub. No. 2002/0004483 A1, (Nissen et al.), 10 January 2002, [0065], [0084], [0087], [0093], [0116], [0137], [0193]-[0196]	1-51
Y ✓	US 5,217,881 (PARK LS), 8 June 1993, col. 3, lines 10-38, col.4 lines 55-68, col.5, lines 1-29	1-51